

Saltase

New quality for low-sodium bakery products

Saltase stabilizes the dough structure and enhances baking performance

Numerous efforts are being made to reduce the salt content of bakery products, but this often causes problems in the production process because low-sodium doughs have less fermentation stability. Saltase, an innovative enzyme system from DeutscheBack, solves this problem and ensures good dough stability and machinability. It enables bakeries to reduce the salt content of their range without loss of quality.

The “low-sodium” issue is gaining significance

Common salt (sodium chloride, NaCl) is an important nutrient with a function in human metabolism; in particular it regulates the fluid and electrolyte balance. But if one's sodium intake is too high it may lead to health problems such as hypertension and cardiovascular disease.

Reduction of the salt content of bakery products is likely to become a major issue in the industry in the next few years. The reason lies in consumers' eating habits: since many consumers take in between 8 and 12 grams of salt daily instead of the recommended 5 grams, some countries including the UK, Belgium, Spain and Australia have

Benefits of Saltase

- Salt reduction without adjustments to the process
- Drier dough surfaces
- Better machinability
- Stronger dough structure
- Greater gas retention capacity

already set statutory limits to the salt content of processed foods. Other states, among them Germany, are calling for a voluntary commitment by the food industry.





Fig. 1: White bread doughs with different salt levels and treatment with Saltase after proofing

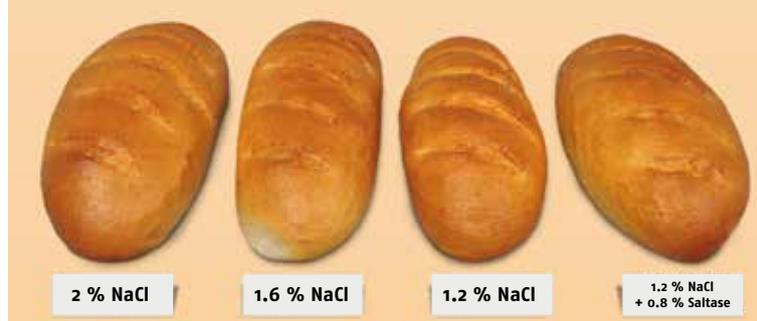


Fig. 2: White bread with different salt levels and treatment with Saltase after baking

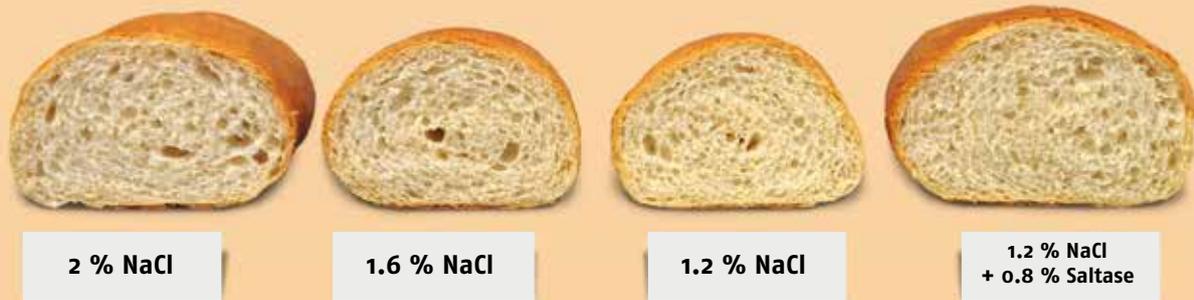


Fig. 3: White bread with different salt levels and treatment with Saltase; appearance when cut

Salt – a flavour carrier with a technical function

Since salt is an important component of the recipe with the task of strengthening the gluten network, reduction of this ingredient may have a negative effect on fermentation tolerance and the texture and shred of the loaf. In other words, a low salt content does not only affect the taste: it also changes the rheology of the dough and the appearance and texture of the baked product.

Our applications technologists at DeutscheBack have tackled this problem, and together with the enzyme specialists from their sister company SternEnzym they have developed a new functional system that prevents loss of quality in low-sodium bakery products.

High fermentation stability even at 40 percent replacement

Baking trials at our Stern-Technology Center revealed that it was quite possible to reduce the amount of salt from 2 to 1.2 percent in wheat loaves. Since the activity of the yeast and also the oven rise and baked volume increase when the salt content is reduced, there is in principle a risk that the structure of low-sodium doughs will collapse towards

the end of proofing. Fig. 1 shows that the dough already weakens during proofing when the salt content is reduced to 1.6 percent, and that at 1.2 percent salt the surface looks irregular. This is also reflected in the baked loaves in Fig. 2: the volume is noticeably smaller. Fig. 3 shows that the volumes with 2 percent salt and 1.2 percent salt plus 0.6 percent Saltase are similar and the crumb structure is very uniform.

Saltase Plus: the enzyme system with a salty note

For bakeries that wish to compensate for the reduced salt taste we offer the functional system Saltase Plus. In this product we combine the enzymes from Saltase with a balanced mixture of potassium chloride and yeast extract. This gives the baked goods a pleasant, salty note without a bitter off-taste.

The use of Saltase or Saltase Plus does not require adjustment of the recipe or the process parameters. We recommend a gradual one-to-one replacement of salt with Saltase. In this way you can gradually get your customers used to eating low-sodium bread and rolls.